



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,008	02/17/2004	Brig Barnum Elliott	03-4034	9557
25537	7590	04/29/2010		
VERIZON			EXAMINER	
PATENT MANAGEMENT GROUP			HANNON, CHRISTIAN A	
1320 North Court House Road				
9th Floor			ART UNIT	PAPER NUMBER
ARLINGTON, VA 22201-2909			2618	
			NOTIFICATION DATE	DELIVERY MODE
			04/29/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@verizon.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/780,008	ELLIOTT, BRIG BARNUM	
	<b>Examiner</b>	<b>Art Unit</b>	
	CHRISTIAN A. HANNON	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 15 February 2010.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-18 and 36-38 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-18, 36-38 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

This action is response to applicant's response filed on 2/15/2010. Claims 1-18 and 36-38 are now pending in the present application. **This action is made final.**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1–5, 8-9, 11-18 and 36-38 are rejected under 35 U.S.C. 102(a) as being anticipated by Millar (US 6,831,901).

Regarding claims 1, 17 and 18, Millar discloses a patch panel system comprising an interface unit, or Hub item 130 of figure 3, that includes a plurality of ports, or ports connecting 120-1 .... 120-n to Hub item 130 of figure 3, configured to connect to a plurality of user devices, or plurality of BTS item 120-n of figure 3, the interface unit being configured to receive one or more analog signals output from a user devices of the plurality of user devices via a port of the plurality of ports, or analog RF signals originating in BTS items of figure 3 going to Hub item 130 (see column 9, lines 18-24), generate a packet from the one or more analog signals, Hub 130, packetizes data sent from BTS units (see column 7, lines 20-23) and transmit the packet, or transmit packet from input of Hub item 130 to output of Hub item 130, and a radio unit, or Radio access node items 150 of figure 3, configured to receive the packet, or receive packets sent from Hub item 130 to RAN item 150 via Line 342 of figure 3, convert the packet to a

depacketized radio signal representing only extracted payload bits, or  
depacketizing/reconstructing the received bits for use at the RAN, where the payload is  
the data originated at the BTS meant for connection to the RAN, but was packetized  
merely for transmission through the interface unit/Hub, and transmit the depacketized  
radio signal representing only extracted payload bits over a radio channel, or  
propagating the RF (i.e. depacketized signal, that had been packetized for  
transmission/propagation through the Hub) via the antenna of RAN items150 to mobile  
transceiver devices (see figure 1). In addition Millar discloses that a means for binding  
between a port and a radio channel is based on addresses associated with the port and  
radio channel (see column 11, lines 51-53).

Regarding claim 2, Millar discloses claim 1, wherein the one or more analog  
signals are associated with a constant bit rate service, or quality assured service, as  
disclosed that overhead bits can include parity information, effectively providing a upper  
level on delays, therefore ensuring quality of at least a constant rate (see column 4,  
lines 30-35).

Regarding claim 3, Millar discloses claim 3, wherein the interface unit includes a  
plurality of interface units each connected to a plurality of user devices and the radio  
unit includes a plurality of radio units configured to be communicative over a plurality of  
types of radio channels, Millar discloses a plurality of interfaces delineated in pairs of  
HDC/HUC which interface with the discrete, respective, user device serving different  
radio channels (see figure 3).

Regarding claim 4, Millar discloses claim 1, wherein the ports include a plurality of different types of ports configured to connect to a plurality of different types of user devices, Millar discloses a down and an up conversion port, associated with different user devices, or different BTS' (see figure 3).

Regarding claim 5, Millar discloses claim 1, wherein when generating a packet from the one or more analog signals, the interface unit is configured to digitize the one or more analog signals to obtain bit representations corresponding to the one or more analog signals, use the bit representations for a payload portion of the packet, and add header or framing information to the packet that identifies at least one of the radio unit and the radio channel (see column 4, lines 8-40).

Regarding claim 8, Millar teaches claim 1, wherein the radio signal includes one of amplitude modulated waveform and a frequency modulated waveform (see column 8, lines 48-61).

Regarding claim 9, Millar teaches claim 1, wherein the radio unit is further configured to depacketized the packet to obtain depacketized information and wherein when converting the packet to a radio signal, the radio unit is configured to convert the depacketized information to a radio signal (column 9, lines 33-39).

Regarding claim 11, Millar teaches claim 1, wherein a binding exists between the port and the radio channel (see column 7, lines 30-35; column 9, lines 18-24).

Regarding claim 12, Millar teaches claim 11, further comprising a management unit configured to control the binding between the port and the radio channel (see column 2, lines 45-51).

Regarding claim 13, Millar teaches claim 1, wherein the radio unit includes a plurality of radio units with a plurality of associated radio channels, where a plurality of bindings exist between the ports of the interface unit and the radio channels associated with the radio units (see column 5, lines 63-67, column 8, lines 34-36, column 9, lines 23-25).

Regarding claim 14, Millar teaches claim 13, further comprising a management unit, or control software, configured to control the binding between the ports of the interface unit and the radio channels associated with the radio units (see column 2, lines 45-51).

Regarding claim 15, Millar teaches claim 14, wherein the management unit uses first addresses associated with the ports and second addresses associated with the radio channels to control the bindings between the ports and the radio channels, at least one of the first and second addresses being used to transmit the packet from the interface unit to the radio unit (see column 11, lines 49-56).

Regarding claim 16, Millar teaches claim 1, wherein the interface unit is further configured to receive signaling information, recognize the signaling information and include the signaling information with the packet (see column 2, lines 45-51).

Regarding claim 36, Millar discloses a patch panel system comprising a first interface unit that includes a plurality of first ports configured to connect to a plurality of first user devices, the first interface unit being configured to receive one or more first analog signals output from a first user device of the plurality of first user devices via first port of the plurality of first ports (see operation of Hub item 130, as referenced to

rejection of claims 1,17 and 18), generate a first packet from the one or more first analog signals (see column 7, lines 20-23), transmit the first packet, a first radio unit configured to receive the first packet, convert the first packet to a first depacketized radio signal representing only extracted first payload bits and transmit the first depacketized radio signal representing only extracted first payload bits over a first radio channel, or the first RAN item 150-1 of figure 3 (column 9, lines 33-39), a second radio unit configured to receive one or more second depacketized radio signals representing only extracted second payload bits, generate a second packet from the one or more second depacketized radio signals representing only extracted second payload bits and transmit the second packet and a second interface unit that includes a plurality of second ports configured to connect to a plurality of second user devices, the second interface unit being configured to receive the second packet convert the second packet to a second analog signal and output the second analog signal to a second user device of the plurality of second user devices via a second port of the plurality of second ports, or the operation of the claimed “second radio unit” is analogous to the flow of figures 1 and 3 disclosed by Millar when viewed in a right to left fashion, namely “unpacketized” bits are received at the RAN items, second ports, where they are packetized for transmission across the Hub, and then depacketized to the corresponding BTS on the left side of the data flow (see column 7, lines 15-30 and column 9, lines 18-39).

Regarding claim 37, Millar discloses that the first and second interface unit includes the same interface unit, see Hub item 130 of figure 3.

Regarding claim 38, Millar discloses claim 36, wherein the first and second radio units include a same radio unit see RAN item 150-1 of figure 3.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Millar in view of provisional application # 60/371,994 filed 4/12/2002 of which patent 6,934,077 issued and herein serves as reference to the subject matter taught.

Regarding claim 6, Millar discloses claim 5, however fails to teach wherein when adding header or framing information to the packet, the interface unit is configured to add IP header information to the packet. The '077 patent discloses adding header or framing information to the packet, the interface unit is configured to add IP header information to the packet (see column 6, lines 6-18; '077 patent). Therefore it would be obvious to one of ordinary skill in the art to combine the teachings of Millar with those of the '077 patent in order to provide for a known packetizing scheme for transfer of data.

Regarding claim 7, Millar discloses claim 5, however fails to teach wherein when adding header or framing information the interface unit is configured to add Ethernet framing information to packet. The '077 patent discloses adding header or framing

information the interface unit is configured to add Ethernet framing information to packet. Therefore it would be obvious to one of ordinary skill in the art to combine the teachings of Millar with those of the '077 patent in order to provide for a known packetizing scheme for transfer of data.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Millar.

Regarding claim 10, Millar teaches claim 1, however fails to teach wherein the radio unit is further configured to encrypt bits associated with the packet. Millar teaches desire of successfully transferring bits, of which encryption is a widely known means. Therefore it would be obvious to one of ordinary skill in the art to combine the teachings of Millar with those of one of the vast array of known encryption schemes to further Millar's goals.

#### ***Response to Arguments***

6. Applicant's arguments filed 2/15/2010 have been fully considered but they are not persuasive.

First, regarding Applicants arguments centered on the premise that Millar fails to teach an interface being configured to receive one or more *analog* signals, the Examiner respectfully disagrees. The passages relied on by the Applicant on page 10 of their remarks: column 6, lines 63-65 refers to that which is typical or of the prior art (see column 6, line 63: "Typically..."; column 7, lines 7-8: "Hence in the usual arrangement in the prior art"). The Examiner has relied on the embodiments of figure 3 of Millar which disclose that an analog signal is sent via line 312 to the HDC 310-1, which is part of HUB or interface item 130. HDC 310-1 is shown to include an RF down converter item

410 in figure 4. This RF down converter necessarily implies that an analog RF signal is sent from the BTS 120-1 over line 312, to arrive at HUB 130, specifically at the HDC 310-1 part of HUB 130 (see figure 3 and 4). The analog signal sent from the BTS is then downconverted to IF and then eventually downconverted further to a digital baseband signal (see column 9, lines 18-25). Millar explicitly teaches that within HUB 130 there resides a means for conversion from an analog RF signal to a digital signal within the HUB, again, Millar discloses receiving an analog signal and digitizing it at the HUB.

Applicant's repeated reliance on the IF stage (Applicant Remarks pages 10-12) is moot, as Millar explicitly teaches reception of an RF stage at HUB 130, explicitly the HDC 310-1 which is within HUB 130 (see figures 3 and 4).

Next turning to Applicant's assertion that the base transceiver stations are not properly interpreted as "user devices" the Examiner respectfully disagrees. In support of the Applicant's stance the Applicant relies on paragraph [0022] of the Applicant's specification. The Applicant's cited passage requires strict limits on a "user device" so that it is confined to be "an analog or digital communication device" [BTS sends analog signals; see column 9, lines 18-25] or "...another type of communication system" [BTS is not a facsimile machine, and therefore logically it is another type of communication system relative to the list provided in Applicant's specification] or "an information exchange system" [the function of a BTS is to exchange information among network users, which is known to a person of skill in the art] The Examiner is confident that the BTS disclosed by Millar is in fact an analog or digital communication device and/or

“another” type of communication device. Should the applicant truly intend to confine the scope of the claim to the explicit list of predefined unambiguous terms (e.g.: a telephone, a teletypewriter, a facsimile machine etc.) the claim should be amended to reflect such a position.

Second turning to Applicant’s assertion that Millar fails to teach transmitting only extracted payload bits (see page 14; Applicant Remarks), the Examiner respectfully disagrees. The Examiner has characterized the “only extracted payload bits”, portion of the claim to be representative of the depacketized signal, that has been packetized for transmission through the HUB 130, and depacketized, or only extracted payload bits, to be sent via the antenna of RAN items 150 to mobile transceiver devices. Put another way, the Examiner has characterized the “only extracted payload bits” to be those that remain after depacketization, so as to leave only a payload. While the Applicant is correct in restating the principles of broadcast versus addressed cellular communications (see page 14 of Applicant Remarks), the claim in no way prohibits such an interpretation as applied by the Examiner.

Accordingly the claims remain rejected as set forth hereinabove.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTIAN A. HANNON whose telephone number is (571)272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. A. H./  
Examiner, Art Unit 2618  
April 20, 2010

/Edward Urban/  
Supervisory Patent Examiner, Art Unit 2618